

Azoamicus gen. nov.

Submitted by Speth, Daan

Genus *Azoamicus*

Etymology

[A.zo.a'mi.cus] N.L. pref. *azo-*, pertaining to nitrogen; L. masc. n. *amicus*, friend; N.L. masc. n. *Azoamicus*, friend that pertains to nitrogen

Nomenclatural type

Species *Azoamicus ciliaticola*^{Ts}

Description

'*Candidatus Azoamicus ciliaticola*' is an obligate endosymbiont of an anaerobic ciliate and has a dedicated role in respiration and providing energy for its eukaryotic host. '*Candidatus A. ciliaticola*' contains a highly reduced 0.29-Mb genome that encodes core genes for central information processing, the electron transport chain, a truncated tricarboxylic acid cycle, ATP generation and iron–sulfur cluster biosynthesis. The genome encodes a respiratory denitrification pathway instead of aerobic terminal oxidases, which enables its host to breathe nitrate instead of oxygen. '*Candidatus A. ciliaticola*' and its ciliate host represent an example of a symbiosis that is based on the transfer of energy in the form of ATP, rather than nutrition.

Classification

Bacteria » *Pseudomonadota* » *Gammaproteobacteria* » "Azoamiales" » "Azoamicaceae" » *Azoamicus*

References

Effective publication: Graf et al., 2021 [1]

Registry URL

<https://seqco.de/i:49071>

Species *Azoamicus ciliaticola*^{Ts}

Etymology

[ci.li.a.ti.co'la] N.L. fem. n. *ciliata*, referring to a group of ciliated protozoa; N.L. masc. suff. *-cola*, dweller or inhabitant; N.L. masc. adj. *ciliaticola*, dwelling within a ciliate

Nomenclatural type

[NCBI Assembly: GCF_902860225.1](#)^{Ts}

Description

Azoamicus ciliaticola, which is an obligate endosymbiont of an anaerobic ciliate and has a dedicated role in respiration and providing energy for its eukaryotic host. *A. ciliaticola* contains a highly reduced 0.29-Mb genome that encodes core genes for central information processing, the electron transport chain, a truncated tricarboxylic acid cycle, ATP generation and iron–sulfur cluster biosynthesis. The genome encodes a respiratory denitrification pathway instead of aerobic terminal oxidases, which enables its host to breathe nitrate instead of oxygen. *A. ciliaticola* and its ciliate host represent an example of a symbiosis that is based on the transfer of energy in the form of ATP, rather than nutrition.

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References

Effective publication: Graf et al., 2021 [1]

Assigned taxonomically: Graf et al., 2021 [1]

Registry URL

<https://seqco.de/i:49070>

References

1. Graf et al. (2021). Anaerobic endosymbiont generates energy for ciliate host by denitrification. *Nature*.
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Register List Certificate of Validation

On behalf of the *Committee on the Systematics of Prokaryotes Described from Sequence Data* (SeqCode Committee), we hereby certify that the Register List seqco.de/r:nnau0hgf submitted by **Speth, Daan** and including 2 new names has been successfully validated.

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